Wireless Connectivity Solutions

Product Information

Weidmüller

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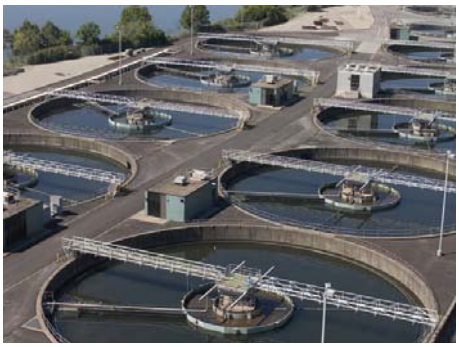
Types of Wireless Products

Product Overview

Weidmuller industrial wireless products provide secure and reliable solutions for a wide range of industries and applications, as an alternative for signal and data wiring. These products fall into four groups:



Wireless I/O, also known as radio telemetry, connect directly to sensor and control signals, and transmit the signal values by radio. The signals are either re-created as similar signals, or output as a data connection — Ethernet, Profibus, Modbus etc. Wireless I/O networks can be as simple as two units transferring a small number of signals from one point to another, or they can be complex data-acquisition networks with multiple “master” interfaces to external systems.

Wireless I/O

Wireless Gateways provide wireless connectivity between data buses - connectivity between devices using the same data bus, or between different data buses (Ethernet to Profibus to DeviceNet to Modbus etc). Wireless gateways are similar in operation to wireless modems, however gateways only provide a register interface to the data bus, transferring I/O registers only.

Wireless Gateways

Wireless Modems transmit serial or Ethernet data, providing a wireless extension of the data link. Example applications are PLC to PLC connections (point-to-point), connecting SCADA to a group of PLCs (point-to-multipoint), or forming a wireless PLC LAN (multidrop). Wireless modems transmit the data with minimal transformation.

Wireless Modems

Wireless GPRS Alarm Modems use GPM mobile technology to provide alarm and status information directly to a mobile device, SMS, email, or via fax. The GPRS Alarm Modem can be located anywhere GSM reception is available. Site, remote location, or plant monitoring can be conducted remotely without the need for onsite employees.

Wireless GPRS Modem

Wireless I/O Unidirectional Transmitter/Receiver Units – Introduction

Wireless Input/Output (I/O)

Wireless I/O connects directly to analog, discrete and pulse transducer signals. The signals are transmitted by radio and either re-created as output signals, or output via serial link or field-bus.

Weidmuller Wireless I/O units have the ability to form sophisticated peer-to-peer networks, with event-reporting messaging to optimize wireless density. Weidmuller products are designed for high reliability operation on open license-free radio bands.

WI-I/O 9-L Unidirectional Transmitter/Receiver Units

- Frequency hopping spread spectrum 902-928 MHz 1W license-free USA/Canada
- Configurable sub-bands license-free Mexico, South America, Australia/NZ, Hong Kong

The Unidirectional Wireless I/O range of products is suitable for connecting to a single sensor or group of sensors and provides an economical solution for remote monitoring systems. The Unidirectional L products can also be used in more complex networks as signal transmitters or receivers

Features

Matched transmitter/receiver pair of modules, or individual transmitter and receiver units

- Peer-to-peer communications. Exception reporting. Reliable self-checking messages. Highly secure data encryption.
- Multi-hop repeater functions - up to 5 intermediate units can be configured in any input-output link
- Factory configured as a matched Transmitter/Receiver pair or user-configurable with E-Series Windows configuration program

Transmitter unit

- Input-only transmitter unit - two digital/pulse inputs, one analog input and one thermocouple mV input
- Transmits to Receiver unit as a matched pair where the input signals are re-created as output signals, or can transmit to a Multi-I/O or Gateway unit
- Class 1 Div 2 hazardous areas approval (USA/Canada)
- Up to 3000 wireless units per network
- External inputs plus internally calculated values - analog setpoint status, pulse count, power supply voltage
- Thermocouple input –100 to +100mV with cold-junction compensation and linearization for J, K or T-type
- Setpoints status generated by comparing analog input to high and low setpoints
- Digital inputs can also be used as pulse count inputs
- Power supply 9 – 30VDC, measured and available as a transmitted variable
- 24VDC analog loop supply internally provided
- RS232 Configuration and diagnostics port

Receiver unit

- Output-only receiver unit - three digital contact outputs and one analog output
- Receives radio commands from Transmitter unit as a matched pair where the input signals are re-created as output signals, or can receive commands from a Multi-I/O or Gateway unit
- Class 1 Div 2 hazardous areas approval (USA/Canada)
- Up to 3000 wireless units per network
- Power supply 9 – 30VDC; 24VDC analog loop supply internally provided
- Communications failure indication and configurable output
- Outputs can be configured as retained or reset (fail-safe) on communications failure
- LED indication of radio signal strength
- RS232 Configuration and diagnostics port

WI-I/O 9-L-T Transmitter

WI-I/O 9-L-R Receiver

Technical Data		
Transmitter Inputs:		
Digital:	two inputs, suitable for voltage free contacts / NPN, or voltage input 0-1 VDC on / >3 VDC off	
Pulse:	max rate 10 Hz, 50 msec on time. Pulse counted as 16 bit register.	
Analog:	0-20 mA (4-20mA, 0-10mA)	
"floating" differential input:		
resolution	16 bit	
accuracy	< 0.1 %	
Thermocouple	Millivolt (-100mV to +100mV), J, K or T type linearization with on-board cold-junction compensation	
Accuracy	greater than 1°C	
Receiver Outputs		
Digital		three relay contact outputs, 260V 1A
Analog		0-20mA
resolution		12 bit
accuracy		0.10%
Comms-Fail		Internal status based on configurable time-out value. Comms-fail status can be configured to a local output.
Fail-safe		On "comms-fail", outputs user-configurable as retained (last correct value) or reset (fail-safe)
Power Supply	9-30 VDC	9-30 VDC
Power consumption @12VDC	Receiver 100mA, Transmitter 40mA quiescent, during radio transmission (50 msec) 300mA	Receiver 100mA, Transmitter 40mA quiescent, during radio transmission (50 msec) 300mA
Analog loop supply internally generated	24VDC 30mA	24VDC 30mA
Internal monitoring of supply low voltage status	may be transmitted as an "input" (Transmitter unit only)	
Power consumption increases for pulse inputs > 10Hz.		
Serial Port	RS232 RJ45 female DCE, used for configuration and diagnostics	RS232 RJ45 female DCE, used for configuration and diagnostics

General Data		
Operating Temperature	-40 to 60°C (-40 to 140°F)	-40 to 60°C (-40 to 140°F)
Humidity	0 - 99% RH	0 - 99% RH
Approvals	FCC Part 15.247, RS210, CSA Class 1 Div 2	FCC Part 15.247, RS210, CSA Class 1 Div 2
Mounting	DIN-rail mounting	DIN-rail mounting
LED indication: Transmitter Unit	Power/OK, Radio TX , DIN1, DIN2, Analog Setpoint status	
LED indication: Receiver Unit		Power/OK, Radio RX, DO1, DO2, DO3, Communications Fail.
frequency hopping spread spectrum	902-928MHz, sub-bands available	902-928MHz, sub-bands available
Transmit power	1W	1W
Maximum line of sight range	20 miles (4W ERP), 15km (1W ERP); 3000 ft / 1000 m in obstructed industrial environments. Radio distances can be increased by up to 5 intermediate repeater units. Each transmission may be configured to be sent 1 to 5 times.	20 miles (4W ERP), 15km (1W ERP); 3000 ft / 1000 m in obstructed industrial environments. Radio distances can be increased by up to 5 intermediate repeater units. Each transmission may be configured to be sent 1 to 5 times.
Antenna connector	SMA connector for antenna or coaxial cable connection.	SMA connector for antenna or coaxial cable connection.
Dimensions mm (in)	100 x 22 x 120 (3.9 x 0.9 x 4.7)	100 x 22 x 120 (3.9 x 0.9 x 4.7)
Configuration	User configuration via serial port. Unidirectional units can be configured to network with Multi-I/O and Gateway units.	User configuration via serial port. Unidirectional units can be configured to network with Multi-I/O and Gateway units.
Diagnostics	Diagnostics features - read input values, write output values, radio signal strength, monitor communication messages.	Diagnostics features - read input values, write output values, radio signal strength, monitor communication messages.

Ordering Data	Type	Part No.	Type	Part No.
	WI-I/O 9-L-T	**6720005005**	WI-I/O 9-L-R	**6720005006**

	WI-I/O 9-L-P1 Set - 1 Transmitter, 1 Receiver	WI-I/O 9-L-P2 Set with 2 WI-ANT-DPL-0-8
Technical Data		
Transmitter Inputs:		
Digital:	two inputs, suitable for voltage free contacts / NPN, or voltage input 0-1 VDC on / >3 VDC off	two inputs, suitable for voltage free contacts / NPN, or voltage input 0-1 VDC on / >3 VDC off
Pulse:	max rate 10 Hz, 50 msec on time. Pulse counted as 16 bit register.	max rate 10 Hz, 50 msec on time. Pulse counted as 16 bit register.
Analog:	0-20 mA (4-20mA, 0-10mA)	0-20 mA (4-20mA, 0-10mA)
"floating" differential input:		
resolution	16 bit	16 bit
accuracy	< 0.1 %	< 0.1 %
Thermocouple	Millivolt (-100mV to +100mV), J, K or T type linearization with on-board cold-junction compensation	Millivolt (-100mV to +100mV), J, K or T type linearization with on-board cold-junction compensation
Accuracy	greater than 1°C	greater than 1°C
Receiver Outputs Digital	three relay contact outputs, 260V 1A	three relay contact outputs, 260V 1A
Analog	0-20mA	0-20mA
resolution	12 bit	12 bit
accuracy	0.10%	0.10%
Comms-Fail	Internal status based on configurable time-out value. Comms-fail status can be configured to a local output.	Internal status based on configurable time-out value. Comms-fail status can be configured to a local output.
Fail-safe	On "comms-fail", outputs user-configurable as retained (last correct value) or reset (fail-safe)	On "comms-fail", outputs user-configurable as retained (last correct value) or reset (fail-safe)
Power Supply	9-30 VDC	9-30 VDC
Power consumption @12VDC	Receiver 100mA, Transmitter 40mA quiescent, during radio transmission (50 msec) 300mA	Receiver 100mA, Transmitter 40mA quiescent, during radio transmission (50 msec) 300mA
Analog loop supply internally generated	24VDC 30mA	24VDC 30mA
Internal monitoring of supply low voltage status	may be transmitted as an "input" (Transmitter unit only)	may be transmitted as an "input" (Transmitter unit only)
Power consumption increases for pulse inputs > 10Hz.		
Serial Port	RS232 RJ45 female DCE, used for configuration and diagnostics	RS232 RJ45 female DCE, used for configuration and diagnostics
General Data		
Operating Temperature	-40 to 60°C (-40 to 140°F)	-40 to 60°C (-40 to 140°F)
Humidity	0 - 99% RH	0 - 99% RH
Approvals	FCC Part 15.247, RS210, CSA Class 1 Div 2	FCC Part 15.247, RS210, CSA Class 1 Div 2
Mounting	DIN-rail mounting	DIN-rail mounting
LED indication: Transmitter Unit	Power/OK, Radio TX , DIN1, DIN2, Analog Setpoint status	Power/OK, Radio TX , DIN1, DIN2, Analog Setpoint status
LED indication: Receiver Unit	Power/OK, Radio RX, DO1, DO2, DO3, Communications Fail.	Power/OK, Radio RX, DO1, DO2, DO3, Communications Fail. LEDs also used to provide radio signal strength indication
frequency hopping spread spectrum	902-928MHz, sub-bands available	902-928MHz, sub-bands available
Transmit power	1W	1W
Maximum line of sight range	20 miles (4W ERP), 15km (1W ERP); 3000 ft / 1000 m in obstructed industrial environments.Radio distances can be increased by up to 5 intermediate repeater units. Each transmission may be configured to be sent 1 to 5 times.	20 miles (4W ERP), 15km (1W ERP); 3000 ft / 1000 m in obstructed industrial environments. Radio distances can be increased by up to 5 intermediate repeater units. Each transmission may be configured to be sent 1 to 5 times.
Antenna connector	SMA connector for antenna or coaxial cable connection.	SMA connector for antenna or coaxial cable connection.
Dimensions mm (in)	100 x 22 x 120 (3.9 x 0.9 x 4.7)	100 x 22 x 120 (3.9 x 0.9 x 4.7)
Configuration	Factory configuration transmitter/receiver matched pair, AI to AO, 2DI to 2DO, SP status to DO3. User configuration via serial port. Unidirectional units can be configured to network with Multi-I/O and Gateway units.	Factory configuration transmitter/receiver matched pair, AI to AO, 2DI to 2DO, SP status to DO3. User configuration via serial port. Unidirectional units can be configured to network with Multi-I/O and Gateway units.
Diagnostics	Diagnostics features - read input values, write output values, radio signal strength, monitor communication messages.	Diagnostics features - read input values, write output values, radio signal strength, monitor communication messages.
Ordering Data	**Type** / **Part No.**	**Type** / **Part No.**
Kit Contents	WI-I/O 9-L-P1 **6720005007** • 2 Whip antennas (6720005086), WI-ANT-DPL-2-6-54 • 2 3ft. antenna connecting cables/brackets • 1 configuration cable	WI-I/O 9-L-P2 **6720005008** • 2 Dipole antennas (6720005080), WI-ANT-DPL-0-16 • 2 15ft. antenna connecting cables/brackets • 1 configuration cable

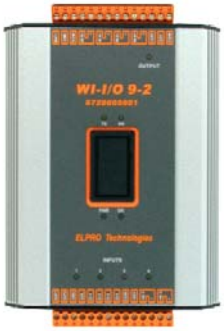
WI-I/O 9 Multi I/O Units

- Large I/O capability with I/O expansion
- Two-way communications
- Use where communications is required in both directions or for large I/O requirements. Each network can handle multiple I/O applications.
- Frequency hopping spread spectrum
- 902-928 MHz 1W license-free USA/Canada
- Configurable sub-bands license-free Mexico
- Up to 95 wireless units per network
- Support up to 31 I/O expansion modules (WI-I/O-EX-I-S-XX) per wireless unit
- Multi-hop repeater functions – up to 5 intermediate units
- Four I/O versions available:

WI-I/O 9	-1	-2	-3	-4
Digital inputs	4	4	0 Voltage-free contacts	4 – 16
Digital outputs	4 Relay contacts	1 FET	8 FET	4 - 16 FET
Analog inputs	2 4-20mA	6 0-20mA/0-10V	0	0
Analog outputs	2 4-20mA	0	8 0-20mA/0-10V	0
Pulse inputs	1 100Hz	4 1 x 1KHz, 3 x 100Hz	0	4 1 x 1KHz, 3 x 100Hz
Pulse outputs	1 100Hz	0 1 x 1KHz, 3 x 100Hz	4	4 1 x 1KHz, 3 x 100Hz

Note: Pulse and digital I/O are same connection.

- Pulse inputs generate separate pulse count and rate value; pulse rates treated as internal analog registers with configurable maximum value.
- Wide voltage power supply, with integral UPS battery charger and solar regulator
- Power supply generates transmittable internal I/O values
- Multiple communication-failure diagnostics with output status
- Class 1 Div 2 approval
- Radio receive signal and background RF noise measurement / logging diagnostics
- Input measurement display and output “forcing” diagnostics
- Communication logging diagnostics
- Easy-to-use E-Series Windows configuration

	WI-I/O 9-1	WI-I/O 9-2
		
Technical Data		
Inputs		
Digital: opto-isolated (5000V) inputs suitable for voltage free contacts or NPN transistor, contact wetting current 5 mA	four inputs	four inputs
Analog: "floating" differential inputs, common mode voltage 27V, 24VDC for powering external loops provided, digital filtering 1 sec.	two 4-20mA resolution 15 bit, accuracy 0.1%	six 0-20mA resolution 12 bit, accuracy 0.1%
Pulse: as per digital inputs, Max pulse rate 100Hz, pulse width min 5ms	one input (DI1)	four input(DI1-4) - first pulse input (DI1) max 1000Hz, pulse width min 0.5ms
Outputs		
Digital	four relay contacts, Form A, AC, 50V 5A/ DC 30V 2A	one FET output 30VDC 500mA
Analog: current sink to common, max loop voltage 27V, max loop resistance 1000 ohms	two 4-20 mA resolution 15 bit, accuracy 0.1%	
Pulse: FET 30VDC 500mA max 100Hz	one	
Power Supply		
Battery supply	11.5-15.0 VDC	11.5-15.0 VDC
Normal supply	12-24 VAC or 15-30 VDC, over-voltage and reverse power protected	12-24 VAC or 15-30 VDC, over-voltage and reverse power protected
Battery charging circuit	included for 1.2-12 AHr sealed battery	included for 1.2-12 AHr sealed battery
Solar regulator	for direct connection of solar panel (up to 30W) and solar battery (100AHr)	for direct connection of solar panel (up to 30W) and solar battery (100AHr)
Internal monitoring	power fail, solar charge status, and battery voltage	power fail, solar charge status, and battery voltage
Notes	An internal DC/DC converter provides 24VDC 150mA for analog loop supply.	An internal DC/DC converter provides 24VDC 150mA for analog loop supply.
Serial Port		
RS232/RS485	serial port 9600 baud, 8 bits, no parity, 1 stop bit	serial port 9600 baud, 8 bits, no parity, 1 stop bit
RS232	9pin DB9 female connector	9pin DB9 female connector
RS485	max cable distance 2000 m terminal connections	max cable distance 2000 m terminal connections
General Data		
Operating Temperature	-40 to 60°C (-40 to 140°F)	-40 to 60°C (-40 to 140°F)
Humidity	0-99%RH	0-99%RH
EMC Standards	FCC Part 15, AS3548, 89/336/EEC, EN 301 489	FCC Part 15, AS3548, 89/336/EEC, EN 301 489
Approvals	CSA Class 1 Div 2	CSA Class 1 Div 2
Mounting	DIN rail mounting	DIN rail mounting
LED indication	For power supply, WDT, digital I/O	For power supply, WDT, digital I/O
Transmit power	1W	1W
Sensitivity	-108 dB	-108 dB
Dimensions mm (in)	130 x 185 x 60 (5.1 x 7.3 x 2.4)	130 x 185 x 60 (5.1 x 7.3 x 2.4)

Ordering Data	Type	Part No.	Type	Part No.
	WI-I/O 9-1	**6720005000**	WI-I/O 9-2	**6720005001**

	WI-I/O 9-3	WI-I/O 9-4
Technical Data		
Inputs		up to 16 inputs (4 inputs + 12 selectable I/O) the 12 selectable inputs are surge protected but not isolated
		four input(DI1-4) - first pulse input (DI1) max 1000Hz, pulse width min 0.5ms
Outputs		
Digital	eight FET output 30VDC 500mA	up to 16 FET output (4 inputs + 12 selectable I/O)
Analog: current sink to common, max loop voltage 27V, max loop resistance 1000 ohms	eight 0-20 mA resolution 12 bit, accuracy 0.1%	
Pulse: FET 30VDC 500mA max 100Hz	four (DO1-4)	four (DO1-4)
Power Supply		
Battery supply	11.5-15.0 VDC	11.5-15.0 VDC
Normal supply	12-24 VAC or 15-30 VDC, over-voltage and reverse power protected	12-24 VAC or 15-30 VDC, over-voltage and reverse power protected
Battery charging circuit	included for 1.2-12 AHr sealed battery	included for 1.2-12 AHr sealed battery
Solar regulator	for direct connection of solar panel (up to 30W) and solar battery (100AHr)	for direct connection of solar panel (up to 30W) and solar battery (100AHr)
Internal monitoring	power fail, solar charge status, and battery voltage	power fail, solar charge status, and battery voltage
Notes	An internal DC/DC converter provides 24VDC 150mA for analog loop supply.	An internal DC/DC converter provides 24VDC 150mA for analog loop supply.
Serial Port		
RS232/RS485	serial port 9600 baud, 8 bits, no parity, 1 stop bit	serial port 9600 baud, 8 bits, no parity, 1 stop bit
RS232	9pin DB9 female connector	9pin DB9 female connector
RS485	max cable distance 2000 m terminal connections	max cable distance 2000 m terminal connections
General Data		
Operating Temperature	-40 to 60°C (-40 to 140°F)	-40 to 60°C (-40 to 140°F)
Humidity	0-99%RH	0-99%RH
EMC Standards	FCC Part 15, AS3548, 89/336/EEC, EN 301 489	FCC Part 15, AS3548, 89/336/EEC, EN 301 489
Approvals	CSA Class 1 Div 2	CSA Class 1 Div 2
Mounting	DIN rail mounting	DIN rail mounting
LED indication	For power supply, WDT, digital I/O	For power supply, WDT, digital I/O
Transmit power	1W	1W
Sensitivity	-108 dB	-108 dB
Dimensions mm (in)	130 x 185 x 60 (5.1 x 7.3 x 2.4)	130 x 185 x 60 (5.1 x 7.3 x 2.4)
Ordering Data	**Type** **Part No.**	**Type** **Part No.**
	WI-I/O 9-3 **6720005002**	WI-I/O 9-4 **6720005003**

WI-I/O–EX-1-S Expansion I/O Units (Serial I/O)

Typical Applications

Expansion I/O for WI-I/O 9 wireless units

- up to 31 x WI-I/O-EX-1-S units can be connected to each wireless unit via RS485 (up to 2 km long).
  Serial I/O multiplexer
- transfer I/O via RS485— up to 32 units per multi-drop link.

Expansion I/O for Modbus devices

- up to 31 x WI-I/O-EX-1-S units can be connected to each Modbus master via RS485 (up to 2 km long).

Features

- Multi I/O channels— monitoring and control functions
- Connected via RS485 multi-drop
- Selectable communications via Modbus protocol (both RTU and ASCII formats)
- Sensor signals connected at one module (input signals) are transmitted to another module where the signals are re-created as output signals, or passed via serial to a host device such as a PLC or SCADA system
- Connect to WI-I/O 9 wireless I/O units for up to 31 serial addresses per wireless unit
- Connect WI-I/O-EX-1-S units together to form a serial multi-drop I/O system - up to 32 serial addresses per multi-drop link— no Master device is required to control communications
- Connect up to 99 x WI-I/O-EX-1-S units as multi-drop Modbus I/O (RS485 extenders/isolators required for more than 31 units per single multi-drop length)
- RS485 multi-drop up to 2 km (1 mile) depending on installation environment
- Three I/O versions available

WI-I/O-EX-1-S	67200005035 -11	67200005036 -12	67200005037 -13
Digital inputs	up to 16	up to 8 Voltage-free contacts	up to 8
Digital outputs	up to 16	up to 8 FET	up to 8
Analog inputs	0	4 “floating”/ 8 commoned 0-20mA / 0-10V	0
Analog outputs	0	0	8 sink / source 0-20mA / 0-10V
Pulse inputs	4 1KHz	0	0
Pulse outputs	8 15Hz	8 15Hz	8 15Hz

Note: Digital inputs and outputs are combined channels. When a channel is used as an output, it is not available as an input. Pulse and digital I/O are same connection.

- Peer-to-peer communications; Exception reporting; Reliable self-checking messages; Any input on any unit can be linked to any output on any unit. Inputs can be linked to multiple outputs; Serial communications 9.6Kb/s
- Alternate Modbus RTU or Modbus ASCII slave protocol, serial communications configurable up to 115.2Kb/s, 7 or 8 data bit format
- External I/O plus internally calculated values - analog setpoint status, pulse rate and pulse total, power supply voltage, power supply alarm
- Setpoint status generated by comparing analog inputs to high and low setpoints
- Analog inputs selectable as “floating” dual-terminal inputs or commoned single-terminal inputs; Configurable current (0-10/0-20/4-20mA) or voltage (0-5/0-10/1-5V).
- Analog outputs selectable as single-terminal source or sink outputs. Configurable current (0-10/0-20/4-20mA) or voltage (0-5/0-10/1-5V). Configurable scaling, zero and span parameters.
- Pulse inputs generate separate pulse count value and a pulse rate value. Pulse rates are treated as internal analog registers with a configurable maximum value.
- Multiple communication-failure diagnostics with output status. Fail-to-transmit alarm and fail-to-receive alarm status.
- Class 1 Div 2 hazardous areas approval
- Input measurement display and output “forcing” diagnostics.
- Communication logging diagnostics.
- Easy-to-use E-Series Windows configuration.

	WI-I/O-EX-1-S-11	WI-I/O-EX-1-S-12
Technical Data		
Inputs:		
Digital: suitable for voltage free contacts or NPN transistor, contact wetting current 5mA, inputs are surge protected	up to 16 selectable I/O	up to 8 selectable I/O
Analog: “floating” differential inputs, common mode voltage 27V, 24VDC for powering external loops provided, 0-20mA/ 0-10V resolution 12 bit, accuracy 0.1%		8 input channels, selectable as 4 dual-terminal floating inputs or 8 single-terminal commoned inputs.
Pulse: specifications as per digital inputs Max pulse rate 1kHz, pulse width min 0.5ms	4 inputs (DIO1-4)	
Outputs		
Digital: FET outputs, 30VDC 200mA	up to 16 selectable I/O	up to 8 selectable I/O
Pulse: specifications as per digital outputs Max pulse rate 15.625Hz, pulse width min 32ms	8 outputs (DIO1-8)	8 outputs (DIO1-8)
Power Supply	24VDC, over-voltage and reverse power protected Internal monitoring of supply voltage. This value may be transmitted to remote modules for monitoring. An internal DC/DC converter provides 24VDC 150mA for analog loop supply.	24VDC, over-voltage and reverse power protected Internal monitoring of supply voltage. This value may be transmitted to remote modules for monitoring. An internal DC/DC converter provides 24VDC 150mA for analog loop supply.
Serial Port		
RS485	serial port configurable up to 115.2Kb/s, 7/8 data bits, n/e/o parity, 1 / 2 stop bits	serial port configurable up to 115.2Kb/s, 7/8 data bits, n/e/o parity, 1 / 2 stop bits
RS232	configurable as RS485 port	configurable as RS485 port
RS485	max cable distance 2000 m terminal connections	max cable distance 2000 m terminal connections
General Data		
Operating Temperature	-40 to 60°C (-40 to 140°F)	-40 to 60°C (-40 to 140°F)
Humidity	0-99% RH	0-99% RH
EMC Standards	FCC Part 15, AS3548, 89/336/EEC	FCC Part 15, AS3548, 89/336/EEC
Approvals	CSA Class 1 Div 2 hazardous areas (pending)	CSA Class 1 Div 2 hazardous areas (pending)
Mounting	DIN rail mounting	DIN rail mounting
LED indication	power supply, processor OK, serial TX and RX, digital I/O	power supply, processor OK, serial TX and RX, digital I/O
Dimensions mm (in)	150 x 180 x 35 (5.91 x 7.09 x 1.38)	150 x 180 x 35 (5.91 x 7.09 x 1.38)
Ordering Data	**Type** **Part No.**	**Type** **Part No.**
	WI-I/O-EX-1-S-11 **6720005035**	WI-I/O-EX-1-S-12 **6720005036**

WI-I/O-EX-1-S-13

Technical Data	
Inputs:	
Digital: suitable for voltage free contacts or NPN transistor, contact wetting current 5mA, inputs are surge protected	up to 8 selectable I/O
Outputs	
Digital: FET outputs, 30VDC 200mA	up to 8 selectable I/O
Analog: selectable as current/voltage source or current sink to common, max loop voltage 27V, max loop resistance 1000 ohms, 0 – 20mA/ 0 – 10V, 12 bit, accuracy 0.1%	8 channels
Pulse: specifications as per digital outputs Max pulse rate 15.625Hz, pulse width min 32ms	8 outputs (DIO1-8)
Power Supply	24VDC, over-voltage and reverse power protected Internal monitoring of supply voltage. This value may be transmitted to remote modules for monitoring. An internal DC/DC converter provides 20VDC 150mA for analog loop supply.
Serial Port	
RS485	serial port configurable up to 115.2Kb/s, 7/8 data bits, n/e/o parity, 1 / 2 stop bits
RS232	configuration port 9pin DB9 female connector, 9.6Kb/s, 8/n/1
RS485	max cable distance 2000 m terminal connections
General Data	
Operating Temperature	-40 to 60°C (-40 to 140°F)
Humidity	0-99% RH
EMC Standards	FCC Part 15, AS3548, 89/336/EEC
Approvals	CSA Class 1 Div 2 hazardous areas (pending)
Mounting	DIN rail mounting
LED indication	power supply, processor OK, serial TX and RX, digital I/O
Dimensions mm (in)	150 x 180 x 35 (5.91 x 7.09 x 1.38)

Ordering Data	Type	Part No.
	WI-I/O-EX-1-S-13	**6720005037**

WI-I/O 9-K Transmitter (Single Sensor Units)

- Frequency hopping spread spectrum 902-928 MHz 1W, license-free USA/Canada
- Configurable sub-bands license-free Mexico, South America, Australia/NZ, Hong Kong

The Single Sensor Wireless I/O range of products is suitable for connecting to a single sensor or group of sensors and provides an economical solution for remote monitoring systems. Capable of being powered by battery-only supplies, these products are particularly suitable where power is not available.

Features

- Input-only unit - two digital/pulse one analog
- Networks with Multi-I/O and Gateway units
- Analog Loop Supply for field devices
- Sensor signals (inputs) are transmitted to a Multi-I/O module where the signals are re-created as output signals, or passed via serial or Ethernet data bus to a host device such as a PLC or SCADA system.
- Extremely low power consumption by reverting to “sleep” mode
- Multiple power supply options including battery-only supply
- Weatherproof IP66 / NEMA 4 enclosures
- Class 1 Div 2 hazardous areas approval (USA/Canada)
- Up to 3000 wireless units per network
- Any input on any unit can be wirelessly linked to any output on any unit. Inputs can be linked to multiple outputs.
- Peer-to-peer communications. Exception reporting. Reliable self-checking messages. Highly secure data encryption.
- Multi-hop repeater functions - up to 5 intermediate units can be configured in any input-output link
- External inputs plus internally calculated values - analog setpoint status, pulse rate and pulse total, power supply voltage, power supply alarm
- Setpoint status generated by comparing analog input to high and low setpoints.
- Pulse inputs generate separate pulse count value and a pulse rate value. Pulse rates are treated as internal analog registers with a configurable maximum value.
- Power supply generates internal I/O values that can be transmitted– low normal supply voltage status, low battery voltage status and battery voltage (analog)
- Can connect to up/down counter transducers such as shaft-encoders
- Easily configured to repeat the transmission several times to ensure that the transmission is received correctly
- Easy-to-use E-Series Windows configuration.

WI-I/O-9-K

Technical Data	
Inputs:	two digital/pulse inputs, suitable for voltage free contacts / NPN, or voltage input 0-1 VDC on / >3 VDC off
Digital:	status transmission on change of input signal and on time elapsed since last transmission - update time period 10 sec - 5days, a separate update time can be configured when the discrete input is “on”
Pulse:	Pulse rate up to 1000 Hz, 3 msec on time. Pulse counted as 16 bit register with a 16 bit overflow register (total count 32 bit). Transmissions occur when count change exceeds configured increase, or on time elapsed since last transmission; update time 10 sec - 5 days ; change transmissions may be suspended if increase exceeds a configured value to reduce radio traffic.
Up/Down Pulse Count	the two pulse inputs may be configured to a single count, to suit quadrature or incremental shaft encoder transducers.
Pulse Rate	calculated from rate of pulse input and treated as an internal analog input. Configurable scaling. Transmitted as per analog input.
Analog:	one analog input 0-25 mA (4-20mA, 0-10mA) 0-10V also available “floating” differential input
resolution	12 bit
accuracy	< 0.1 % measurement continuous or sampled
sample time configurable	1 min - 5 days
transducer warm-up time configurable	0.5-127 sec
analog value transmitted on change of input signal or time elapsed since last transmission,	
change sensitivity configurable	0.7-75%
update time configurable	0.1min - 5 days
Setpoint Status	high and low setpoints generate internal digital status setpoint status sets (on) when analog value < low setpoint and resets (off) when analog value > high setpoint status transmitted as per digital input
Power Supply	
Power consumption @12VDC	quiescent (sleep mode) 120µA, operating mode 10mA + analog loop
Power consumption during radio transmission (50 - 100 msec)	300mA @ 1W, 220µA @ 500mW 100mA @ 100mW, 50mA @ 10mW
Analog loop supply internally generated	Yes
Internal monitoring of supply low voltage status	may be transmitted to remote modules as an “input”
Power consumption increases for pulse inputs > 10Hz.	
Serial Port	
RS232	DB9 female DCE, used for configuration and diagnostics

General Data	
Operating Temperature	-40 to 60°C (-40 to 140°F)
Humidity	0 - 99% RH
EMC Standards	compliant 89/336 EEC, EN 300 683, AS3548, FCC Part 15
Approvals	Housing - IP66 NEMA4; FCC Part 15.247, RS210, CSA Class 1, Div 2
Mounting	
LED indication	Radio TX, Operation OK
frequency hopping spread spectrum	902-928MHz, sub-bands available
Transmit power	1 W
Maximum line of sight range	20miles (4W ERP), 15 km (1W ERP)
Receiver data sensitivity	108 dBm
Data rate	19.2 Kbs with forward error correction
Antenna connector	SMA coaxial
Dimensions mm (in)	150 x 64 x 36 (5.1 x 2.5 x 1.4)

Ordering Data	Type	Part No.
	WI-I/O-9-K	**6720005004**
Battery Pack (optional)	WI-BP-I/O-9-K	**6720005112**
Plug and Lead-1 meter	WI-PLI-9-K	**6720005113**

Wireless Gateways WI-GTWY-9

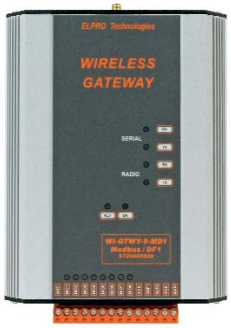
- Frequency hopping spread spectrum
- 902-928 MHz 1W license-free USA/Canada
- Configurable sub-bands license-free Mexico, South America, Australia/NZ, Hong Kong

Features

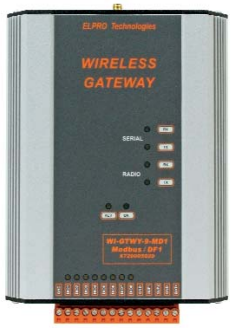
- Connects to data bus at full bus speed (e.g. 12Mb/s for Profibus, 100Mb/s for Ethernet)
- Provides Protocol Conversion (Profibus, Modbus, Ethernet, DeviceNet)
- Can interconnect master-slave, slave-slave and master-master
- Interconnects different data buses - wireless protocol conversion
- Provides a peer-to-peer wireless network using WIB-net
- High security data encryption
- Automatic acknowledgment and error-correction
- Multiple path routing
- Eight on-board discrete I/O, individually configurable as input or output
- Network configuration is performed with easy-to-use free software
- Wide range power supply with integral back-up battery-charging feature

Radio communications can be configured for combination of event reporting (change-of-value), update time, read/write blocks and poll response. Radio message includes system addressing, unit addressing, error checking and configurable security encryption.Communication control includes message acknowledgments and up to four re-transmissions. Peer to peer addressing. Messages may be routed through four intermediate repeater addresses. Fail-to-transmit and fail-to-receive alarms configurable

WI-GTWY-9-MD1
Modbus (Master & Slave), DF1



WI-GTWY-9-PR1
Profibus DP Slave



Technical Data		
Power Supply	9 - 30VDC / 12 - 24VAC Battery charging circuit included for 12V back-up battery, max charge current regulated to 0.7A (>12V supply) Normal current drain MD1 version 12V 150mA; 24V 90mA Other version 12V 270mA; 24V 170mA Add 5mA per active I/O	9 - 30VDC / 12 - 24VAC Battery charging circuit included for 12V back-up battery, max charge current regulated to 0.7A (>12V supply) Normal current drain MD1 version 12V 150mA; 24V 90mA Other version 12V 270mA; 24V 170mA Add 5mA per active I/O
Current drain during radio transmission	Add 12V 350mA; 24V 200mA to above	Add 12V 350mA; 24V 200mA to above
I/O Capacity	4300 I/O points (analog plus discrete)	416 I/O bytes up to 1952 DI/1952 DO, or up to122 AI/122 AO
Register Size	16 bit	16 bit
Number of remote WI-GTWY-9 addresses	500	500
General Data		
Operating Temperature	-40 to 60°C (-40 to 140°F)	0 to 60°C (30 to 140°F)
Storage Temperature		
Humidity	0 - 99 %RH	0 - 95 %RH
EMC Standards	EN 301 489, FCC Part 15, Approved to FCC Part 15.247, RS210	EN 301 489, FCC Part 15, Approved to FCC Part 15.247, RS210
Approvals	Class 1 Div 2 (USA, Canada).	Class 1 Div 2 (USA, Canada).
Mounting	DIN rail mounting,	DIN rail mounting,
LED indication	for processor OK, radio TX and RX, serial TX and RX, active status	for processor OK, radio TX and RX, serial TX and RX, active status
Dimensions mm (in)	130 x 185 x 60 (5.1 x 7.3 x 2.4)	130 x 185 x 60 (5.1 x 7.3 x 2.4)
Wireless Communications	Modbus RTU (binary), master / slave configurable. RS232 or RS485, 300 - 19200 bits/sec.	Profibus-DP functionality according to EN 50170. Modbus RTU
	Allen-Bradley DF1 full-duplex. RS232 only, 300 - 19200 bits/sec.	RS-485 optically isolated with on-board DC/DC converter, automatic baudrate detection (9600 bit/s - 12 Mbit/s)
On-board I/O	Eight discrete I/O, individually configurable as input or output. Inputs suitable for voltage free contacts. Outputs are FET, 30VDC 500mA.	Eight discrete I/O, individually configurable as input or output. Inputs suitable for voltage free contacts. Outputs are FET, 30VDC 500mA.
Configuration	via free Windows software	via free Windows software
Diagnostics	on-line read/write of I/O registers, radio signal strength values from remote units, and off-line testing of data bus protocol.	on-line read/write of I/O registers, radio signal strength values from remote units, and off-line testing of data bus protocol.
Radio Transceiver		
Frequency hopping spread spectrum	902-908 MHz, sub-bands configurable	902-908 MHz, sub-bands configurable
Transmit power	1W	1W
Receiver data sensitivity	108dBm	108dBm
Maximum line-of-sight range	USA/Canada, 4W ERP, 20+ miles	USA/Canada, 4W ERP, 20+ miles
Data rate	19.2 Kb/s with forward-error correction	19.2 Kb/s with forward-error correction
Antenna connector	SMA coaxial	SMA coaxial

Ordering Data	Type	Part No.	Type	Part No.
	WI-GTWY-9-MD1	**6720005020**	WI-GTWY-9-PR1	**6720005021**

Radio communications can be configured for combination of event reporting (change-of-value), update time, read/write blocks and poll response. Radio message includes system addressing, unit addressing, error checking and configurable security encryption.Communication control includes message acknowledgments and up to four re-transmissions. Peer to peer addressing. Messages may be routed through four intermediate repeater addresses. Fail-to-transmit and fail-to-receive alarms configurable

WI-GTWY-9-PR2
Profibus DP Master

WI-GTWY-9-ET1
Ethernet IP, Modbus TCP, TCP/IP functions

Technical Data		
Power Supply	9 - 30VDC / 12 - 24VAC Battery charging circuit included for 12V back-up battery, max charge current regulated to 0.7A (>12V supply) Normal current drain MD1 version 12V 150mA; 24V 90mA Other version 12V 270mA; 24V 170mA Add 5mA per active I/O	9 - 30VDC / 12 - 24VAC Battery charging circuit included for 12V back-up battery, max charge current regulated to 0.7A (>12V supply) Normal current drain MD1 version 12V 150mA; 24V 90mA Other version 12V 270mA; 24V 170mA Add 5mA per active I/O
Current drain during radio transmission	Add 12V 350mA; 24V 200mA to above	Add 12V 350mA; 24V 200mA to above
I/O Capacity	2048 bytes input and 2048 bytes output up to 4300 discrete I/O points, or up to 1024 analog in / 1024 analog out	2048 bytes input and 2048 bytes output up to 4300 discrete I/O points, or up to 1024 analog in / 1024 analog out
Register Size	16 bit	16 bit
Number of remote WI-GTWY-9 addresses	500	500
General Data		
Operating Temperature	0 to 60°C (30 to 140°F)	0 to 60°C (30 to 140°F)
Storage Temperature		
Humidity	0 - 95 %RH	0 - 95 %RH
EMC Standards	EN 301 489, FCC Part 15, Approved to FCC Part 15.247, RS210	EN 301 489, FCC Part 15, Approved to FCC Part 15.247, RS210
Approvals	Class 1 Div 2 (USA, Canada).	Class 1 Div 2 (USA, Canada).
Mounting	DIN rail mounting,	DIN rail mounting,
LED indication	for processor OK, radio TX and RX, serial TX and RX, active status	for processor OK, radio TX and RX, serial TX and RX, active status
Dimensions mm (in)	130 x 185 x 60 (5.1 x 7.3 x 2.4)	130 x 185 x 60 (5.1 x 7.3 x 2.4)
Wireless Communications	Profibus-DP functionality according to EN 50170. RS-485 optically isolated with on-board DC/DC converter, automatic baudrate detection (9600 bit/s - 12 Mbit/s)	10/100 Mbit/s, RJ45 connector, Transformer isolated interface Modbus/TCP class 0, class 1 and partially class 2 slave EtherNet/IP level 2 I/O Server Embedded Web system (Dynamic HTTP), on-board file system (1.4MB flash disc), user downloadable web pages through FTP server, Email functionality (SMTP)
On-board I/O	Eight discrete I/O, individually configurable as input or output. Inputs suitable for voltage free contacts. Outputs are FET, 30VDC 500mA.	Eight discrete I/O, individually configurable as input or output. Inputs suitable for voltage free contacts. Outputs are FET, 30VDC 500mA.
Configuration	via free Windows software	via free Windows software
Diagnostics	on-line read/write of I/O registers, radio signal strength values from remote units, and off-line testing of data bus protocol.	on-line read/write of I/O registers, radio signal strength values from remote units, and off-line testing of data bus protocol.
Radio Transceiver		
Frequency hopping spread spectrum	902-908 MHz, sub-bands configurable	902-908 MHz, sub-bands configurable
Transmit power	1W	1W
Receiver data sensitivity	108dBm	108dBm
Maximum line-of-sight range	USA/Canada, 4W ERP, 20+ miles	USA/Canada, 4W ERP, 20+ miles
Data rate	19.2 Kb/s with forward-error correction	19.2 Kb/s with forward-error correction
Antenna connector	SMA coaxial	SMA coaxial

Ordering Data	Type	Part No.	Type	Part No.
	WI-GTWY-9-PR2	**6720005022**	WI-GTWY-9-ET1	**6720005023**

Radio communications can be configured for combination of event reporting (change-of-value), update time, read/write blocks and poll response. Radio message includes system addressing, unit addressing, error checking and configurable security encryption.Communication control includes message acknowledgments and up to four re-transmissions. Peer to peer addressing. Messages may be routed through four intermediate repeater addresses. Fail-to-transmit and fail-to-receive alarms configurable

WI-GTWY-9-DE1
DeviceNet Slave

WI-GTWY-9-M+1
Modbus Plus Slave

Technical Data		
Power Supply	9 - 30VDC / 12 - 24VAC Battery charging circuit included for 12V back-up battery, max charge current regulated to 0.7A (>12V supply) Normal current drain MD1 version 12V 150mA; 24V 90mA Other version 12V 270mA; 24V 170mA Add 5mA per active I/O	9 - 30VDC / 12 - 24VAC Battery charging circuit included for 12V back-up battery, max charge current regulated to 0.7A (>12V supply) Normal current drain MD1 version 12V 150mA; 24V 90mA Other version 12V 270mA; 24V 170mA Add 5mA per active I/O
Current drain during radio transmission	Add 12V 350mA; 24V 200mA to above	Add 12V 350mA; 24V 200mA to above
I/O Capacity	512 bytes input and 512 bytes output up to 4300 discrete I/O points, or up to 256 analog in / 256 analog out	2048 bytes input and 2048 bytes output up to 4300 discrete I/O points, or up to 1024 analog in / 1024 analog out
Register Size	16 bit	16 bit
Number of remote WI-GTWY-9 addresses	500	500
General Data		
Operating Temperature	0 to 60°C (30 to 140°F)	0 to 60°C (30 to 140°F)
Storage Temperature		
Humidity	0 - 95 %RH	0 - 95 %RH
EMC Standards	EN 301 489, FCC Part 15, Approved to FCC Part 15.247, RS210	EN 301 489, FCC Part 15, Approved to FCC Part 15.247, RS210
Approvals	Class 1 Div 2 (USA, Canada).	Class 1 Div 2 (USA, Canada).
Mounting	DIN rail mounting,	DIN rail mounting,
LED indication	for processor OK, radio TX and RX, serial TX and RX, active status	for processor OK, radio TX and RX, serial TX and RX, active status
frequency hopping spread spectrum		
Transmit power		
Maximum line of sight range		
Dimensions mm (in)	130 x 185 x 60 (5.1 x 7.3 x 2.4)	130 x 185 x 60 (5.1 x 7.3 x 2.4)
Wireless Communications	DeviceNet 2.0 Slave, optically isolated RS422 with selectable baudrate between 125, 250 and 500 Kbit/sec.	Modbus RTU (binary), master / slave configurable. RS232 or RS485, 300 - 19200 bits/sec. Modbus Plus Slave, optically isolated RS485 with standard baudrate of 1 Mbit/sec, global data base transactions with routing for up to six networks.
On-board I/O	Eight discrete I/O, individually configurable as input or output. Inputs suitable for voltage free contacts. Outputs are FET, 30VDC 500mA.	Eight discrete I/O, individually configurable as input or output. Inputs suitable for voltage free contacts. Outputs are FET, 30VDC 500mA.
Configuration	via free Windows software	via free Windows software
Diagnostics	on-line read/write of I/O registers, radio signal strength values from remote units, and off-line testing of data bus protocol.	on-line read/write of I/O registers, radio signal strength values from remote units, and off-line testing of data bus protocol.
Radio Transceiver		
Frequency hopping spread spectrum	902-908 MHz, sub-bands configurable	902-908 MHz, sub-bands configurable
Transmit power	1W	1W
Receiver data sensitivity	108dBm	108dBm
Maximum line-of-sight range	USA/Canada, 4W ERP, 20+ miles	USA/Canada, 4W ERP, 20+ miles
Data rate	19.2 Kb/s with forward-error correction	19.2 Kb/s with forward-error correction
Antenna connector	SMA coaxial	SMA coaxial

Ordering Data	Type	Part No.	Type	Part No.
	WI-GTWY-9-DE1	**6720005024**	WI-GTWY-9-M+1	**6720005025**

Wireless Data Modems

Wireless data modems connect to serial or Ethernet links and transmit the data wirelessly. The modem controls the wireless messages and data ports to provide a “transparent” data transfer.

Wireless Serial Data (Radio Modems)

- RS 232 and RS485 connections
- Industrial power supplies, industrial temperature rating

WI-MOD-9-D RADIO MODEM (SERIAL DATA)

- License-free operation in North and South America
- Wireless data up to 115.2 Kb/s
- 902-928 MHz, 1W, frequency hopping spread spectrum
- Typical line-of-sight distance 20 miles North America (4W ERP)
- One serial data port—
  RS232 and RS485 connections provided
- Serial data up to 115.2Kb/s
- Configuration by Hayes AT commands
  or Windows Configuration software

Modes of Operation

Transparent mode broadcast, “multi-drop” operation configurable error-checking, unlimited repeaters (store & forward).

Controlled mode addressable point-to-point operation, authentication and automatic re-tries, addressed repeater routing.

WI-MOD-9-E WIRELESS ETHERNET MODEM

Features

The WI-MOD-9-E is an ideal solution for Ethernet connections in process control and automation applications - PLCs, DCS, SCADA, data acquisition … it can handle multiple applications simultaneously.

- 10/100 BaseT Ethernet, wireless data up to 200 Kbits/sec.
- 902-928 MHz, 0.1 - 1W, frequency hopping
  spread spectrum
- Typical line-of-sight distance 20 miles (4W ERP),
  up to 60 miles using high gain antennas (4W ERP
- Configurable as Access Point / Client; Bridge / Router
- Multiple layers of error-detection and correction
- Military-grade AES security encryption of wireless data
- Firewall protection and efficient wireless management …
- Message filtering at MAC address level
- Two serial interfaces, RS232 and RS485
- Serial connectivity + Ethernet connectivity at the same time
- PPP and serial server functionality
- Serial Modbus to Modbus TCP conversion
- Discrete channel for status I/O, for failure status or external status transfer.
- Easy to use configuration and Powerful diagnostics
- Configuration and diagnostics via web-browser
- Remote configuration and diagnostics via the wireless link

WI-MOD-E WIRELESS ETHERNET MODEM

Features

- Uses Global 2.4GHz ISM band
- 10/100 BaseT Ethernet, wireless data up to 11 Mbits/sec.
- 802.11b compliant 2.4GHz DSSS, 100mW or 300mW
- Typical line-of-sight distance 5 miles North America (4W ERP)
- Configurable as Access Point / Client; Bridge / Router
- Security, reliability, redundancy …
- High RF output and superior receiver sensitivity gives excellent penetration in congested industrial environments
- Multiple layers of error-detection and correction
- Automatic changeover to another Access Point
  if the wireless link fails
- Military-grade AES security encryption of wireless data
- Industrial ratings down to –35°C
- Firewall protection and efficient wireless management …
- Message filtering at MAC address level
- Two serial interfaces, RS232 and RS485
- Serial connectivity + Ethernet connectivity at the same time
- PPP and serial server functionality
- Serial Modbus to Modbus TCP conversion
- Discrete channel for status I/O, for failure status
  or external status transfer.
- Easy to use configuration and Powerful diagnostics …
- Configuration and diagnostics via web-browser
- Remote configuration and diagnostics via the wireless link

IE-GPRS-I/O-NA GPRS Alarm Modem

Features

- Signalling and telecontrol system designed for automatic operation if required
- Dual band GSM/GPRS modem (GSM 900/1800MHz, 950/1900MHz)
- Permanently online
- Low-cost M2M rates
- 8 digital and 4 analog input ports, 4 digital output ports
- Immediate alarm signalling via SMS, FAX, e-mail or voice message in the event of limiting values being exceeded at the input ports
- Alarm via RS232 also possible
- 8-level recipient list with very flexible configuration options
- Integration of port statuses in message
- Integral cost monitoring
- Data logger (LAN and Internet) available

WI-MOD-9-D
Radio 900MHz

Technical Data	
Power Supply	10 - 30 VDC or 10 - 24 VAC
Normal current drain	70mA/12VDC or 50mA/24VDC
Current when transmitting	350mA/12V or 250mA/ 24V
Low power mode current drain	20mA/12VDC or 15mA/24VDC
Serial Port	
Standard data rates	1200 to 115200 baud.
RS232 and RS485	standard interface connections provided, each connected to the same serial port. Serial interfaces are asynchronous non-return-zero (NRZ) format
Characters supported	7 or 8 data bits, even/odd/no parity, 1 or 2 stop bits
RS232 Connection	provides full duplex operation as a DCE device with RTS/CTS hardware handshaking- standard D9 connector
RS485 connection	provides half duplex operation for twisted pair multi-drop networks
Input and output buffers	2Kbyte
General Data	
Operating Temperature	-40 to 70°C (-40 to +140°F)
Humidity	
EMC Standards	FCC Part 15 Class A and FCC Part 15.247
Approvals	CSA Class 1, Div 2
Mounting	DIN rail mounting
LED indication	for unit OK, radio TX and RX, serial TX and RX, DCD (comms OK)
Dimensions mm (in)	115 x 165 x 32 (4.5 x 6.5 x 1.3)
Radio Transceiver	Frequency Hopping Spread Spectrum Transceiver
Frequency - USA/Canada	902 - 928 MHz
Hop Sequence	16 x 50
Transmit Power	1W
Expected line-of-sight range, depending on local conditions	USA/Canada 20+ miles
RF Data Transmission Rate	19200 baud, 57600 baud, 115200 baud (selectable)
Range may be extended by:	up to five intermediate repeaters in controlled mode unlimited repeaters in transparent mode
Antenna connection	SMA coaxial
Data Transmission	
Transparent mode:	Data is transmitted with a system and group address. Data transmission begins as serial data is received—maximum packet size is 530 bytes. All modules with the 0correct system address, which receive the data packets, outputs the data—error checking is optional.
Controlled mode:	Data is transmitted in packets with a system address, source address, destination address, up to five intermediate repeater addresses, and a 16 bit CRC error-check. If the packet is received with a correct error check, only the destination module will output the data and will also return an ACK transmission. If the source module does not receive the ACK, it will retry a further four times. DCD provides communications status. Auto-connect and dial-up-control modes are available. CTS/RTS flow control provided based on input buffer availability.
Configuration	freeware software package or by Hayes AT commands
Diagnostics	Radio noise, signal strength and bit error rate (BER) diagnostics included. Radio signal strength value available on-line to host device.

Ordering Data	Type	Part No.
	WI-MOD-9-D	**6720005050**

WI-MOD-9-E
Ethernet 900MHz

Technical Data	
Description: Ethernet	10/100 BaseT RJ45, IEEE 802.3 compliant. Bridge/router functions work with all Ethernet protocols
Embedded Protocols:	TCP/IP, UDP ARP, PPP, ICMP, HTTP, FTP, TFTP, TELNET
Serial	
RS232 V.24 DCE	1.2 to 115.2 Kb/s
RS485	1.2 to 115.2 Kb/s Serial server, PPP, Modbus to Modbus TCP conversion
Discrete I/O	One I/O channel
Input	Voltage-free contact
Output	FET 30VDC 500mA
Networking	Configurable as Access Point or Client, Bridge or Router Point-to-point, Point-to-multipoint, user configurable addressing Repeater functionality MAC Filtering - whitelist or blacklist

General Data	
Operating Temperature	-40 to 60°C (-40 to 140°F)
Humidity	99% non-condensing
Power Supply	10 – 30VDC
Current Normal	280mA (12V), 150mA (24V)
Transmit	(1W) 500mA (12V), 300mA (24V)
Approvals	FCC 15.247, RS210, Hazardous area CSA Class 1 Div 2
Mounting	DIN rail mounting
LED indication	Power/OK, Radio Rx and Tx, Radio Link, LAN Link/Activity, Serial Activity, Digital I/O, LAN 10/100Mbit Link
Dimensions mm (in)	115 x 141 x 32 (4.5 x 5.55 x 1.4)
Weight	< 0.4 kg / 0.8 lb
Radio Transceiver	Frequency Hopping Spread Spectrum
Frequency - USA/Canada	902 - 928 MHz
Hop Sequence	16 x 50
Transmit Power	0.1 – 1W (20 – 30 dBm) configurable
Receiver sensitivity	108 dBm @ 10-6 BER
Data rates	19.2, 57.6, 115.2, 230 Kb/s or auto rate selection
Protocol	CSMA/CA with 32 bit CRC and auto-correction
Radio range	up to 60 miles / 100 km line-of-sight using high gain antennas (*up to 4W ERP permitted in USA/Canada) Range may be extended using repeater features
Antenna connection	SMA coaxial
Security	128 bit AES encryption or 64 bit proprietary encryption (configurable) MAC filtering Password protected configuration
Configuration	HTTP with remote configuration via wireless link
Diagnostics	RSSI, channel noise, BER, connection monitoring and statistics

Ordering Data	Type	Part No.
	WI-MOD-9-E	**6720005051**

	WI-MOD-E-100 Ethernet 2.4GHz 100mW	WI-MOD-E-300 Ethernet 2.4GHz 300mW
Technical Data		
Description: Ethernet	10/100 BaseT RJ45, IEEE 802.3	10/100 BaseT RJ45, IEEE 802.3
	Bridge/router functions work with all Ethernet protocols	Bridge/router functions work with all Ethernet protocols
Embedded Protocols:	TCP/IP, UDP ARP, PPP, ICMP, HTTP, FTP, TFTP, TELNET	TCP/IP, UDP ARP, PPP, ICMP, HTTP, FTP, TFTP, TELNET
Serial		
RS232 V.24 DCE	1.2 to 115.2 Kb/s	1.2 to 115.2 Kb/s
RS485	1.2 to 115.2 Kb/s	1.2 to 115.2 Kb/s
	Serial server, PPP, Modbus to Modbus TCP conversion	Serial server, PPP, Modbus to Modbus TCP conversion
Discrete I/O	One I/O channel	One I/O channel
Input	voltage-free contact	voltage-free contact
Output	FET 30VDC 500mA	FET 30VDC 500mA
Networking	Configurable as Access Point or Client, Bridge or Router	Configurable as Access Point or Client, Bridge or Router
	Point-to-Point, Point-to-Multipoint,	Point-to-Point, Point-to-Multipoint,
	user configurable addressing	user configurable addressing
	Repeater functionality	Repeater functionality
	MAC Filtering – whitelist or blacklist.	MAC Filtering – whitelist or blacklist.
	Serial gateway TELNET	Serial gateway TELNET
General Data		
Operating Temperature	-35 to 65°C (-30 to 150°F)	-35 to 65°C (-30 to 150°F)
Humidity	99% non-condensing	99% non-condensing
Power Supply	9 – 30VDC, Current 240mA (12VDC), 150mA (24VDC)	9 – 30VDC, Current 240mA (12VDC), 150mA (24VDC)
Current Normal		
Transmit		
Approvals	FCC Part 15.247, CE ETS 300 328, RSS 210, Hazardous area	FCC Part 15.247, CE ETS 300 328, RSS 210, Hazardous area
	CSA Class 1 Div 2, IEC 60950	CSA Class 1 Div 2, IEC 60950
Mounting	DIN rail mounting	DIN rail mounting
LED indication	Power / OK, Radio Rx and Tx, Radio Link, LAN link / Activity ,	Power / OK, Radio Rx and Tx, Radio Link, LAN link / Activity ,
	Serial Activity, Digital I/O	Serial Activity, Digital I/O
Dimensions mm (in)	115 x 141 x 32 (4.5 x 5.6 x 1.4)	115 x 141 x 32 (4.5 x 5.6 x 1.4)
Weight	< 0.4 kg / 0.8 lb	< 0.4 kg / 0.8 lb
Wireless	2.400 – 2.484GHz Direct Sequence Spread Spectrum (DSSS),	2.400 – 2.484GHz Direct Sequence Spread Spectrum (DSSS),
	13 selectable zones	13 selectable zones
	802.11b compliant, auto rate selection 1 Mb, 2Mb, 5.5Mb, 11Mb	802.11b compliant, auto rate selection 1 Mb, 2Mb, 5.5Mb, 11Mb
Radio Transceiver		
Transmit Power	100mW (20dBm), dependent on local regulations	300mW (25dBm), dependent on local regulations
Receiver sensitivity	96dBm @ 1MB/s, -91dBm @ 11Mb/s < 8% FER	96dBm @ 1MB/s, -91dBm @ 11Mb/s < 8% FER
Radio range	1km @ 100mW	3 miles @ 300mW
	Range may be extended using repeater features	Range may be extended using repeater features
Antenna connection	Dual SMA coaxial	Dual SMA coaxial
Security	128 bit AES encryption (WPA2), TKIP (WPA1) or +04 bit / 40 bit WEP	128 bit AES encryption (WPA2), TKIP (WPA1) or +04 bit / 40 bit WEP
	MAC Address filtering	MAC Address filtering
	Password protected configuration	Password protected configuration
Configuration	HTTP with remote configuration via wireless link	HTTP with remote configuration via wireless link
	Web based system management - RF signal strength, Bit Error Rate, connection monitoring and statistics	Web based system management - RF signal strength, Bit Error Rate, connection monitoring and statistics
Diagnostics	PPP Protocol Access to diagnostics	PPP Protocol Access to diagnostics
	Firmware upgradeable via serial port	Firmware upgradeable via serial port

Ordering Data	Type	Part No.	Type	Part No.
	WI-MOD-E-100	**6720005052**	WI-MOD-E-300	**6720005053**

GPRS Alarm Modem

The GPRS Alarm Modem is designed to collect messages that are detected as activated switching contacts and analog limit values. Communication with the server is performed over a virtual dedicated line via GPRS as a point-to-point, multipoint or multi-drop connection. An Internet exchange server may log the states of the inputs and outputs permanently on the basis of event or time control. The server constitutes a relational database, i.e. external access is possible via SQL queries.

The exchange server is a service provided by Weidmuller.

The configurable alarms are issued via SMS, e-mail, voice messaging and/or fax.

The IE-GPRS-I/O implements telecontrol by remote-switching of the outputs via telephone/mobile telephone.

The IE-GPRS-I/O can be teleserviced and remote-configured.

The Weidmuller GPRS I/O has an aluminum housing just 45 mm wide and the following configurable features:

- Signaling and telecontrol system designed for automatic operation if required
- Dual band GSM/GPRS modem (GSM 900/1800MHz, 950/1900MHz)
- Permanently online
- Low-cost M2M rates
- 8 digital and 4 analog input ports, 4 digital output ports
- Immediate alarm signaling via SMS, FAX, e-mail or voice message in the event of limiting values being exceeded at the input ports
- Alarm via RS232 also possible
- 8-level recipient list with very flexible configuration options
- Integration of port statuses in message
- Integral cost monitoring
- Data logger (LAN and Internet) available

GPRS Alarm Modem

Technical Data	
Housing	Aluminum
Ports	8 digital inputs; 4 digital outputs; 4 analog inputs; 1xRS232 interface
AC input voltage, min.-max.	8-24VAC
DC input voltage, min.-max.	10-36VDC
Input power AC/DC	max. 5 VA AC / max. 5 W DC
Input frequency	47-63 Hz
Operating temperature	-10 to 55°C (14 to 131°F)
Storage temperature	-10 to 70°C (14 to 158°F)
Installation	TS35 DIN-Rail or Wall Mounted
Ingress protection class	IP 20
Data rate	max. 53.6 kbps
Functionality	SMTP; POP3; FTP; DNS; IPTCP; UDP sockets
Status indication	Power
Approvals	cULus, CE
Transmission rate	GPRS dependent
Dimensions mm (in)	137 x 45 x 155 (5.4 x 1.8 x 6.1)

Ordering Data		
	950/1900 MHz	
Type		**Part No.**
IE-GPRS-I/O-NA		**8903980000**

869/900 MHz ANTENNAS

-2dB Whip Antenna WI-ANT-DEMO-900

The WI-ANT-DEMO-900 is a quarter-wave whip antenna. It can be used for short distance applications, where the wireless unit and antenna are mounted inside a non-metallic enclosure.

As the whip antenna is “ground-dependent”, the gain and distance depends on the installation environment.

Type	Part No.
WI-ANT-DEMO-900	6720005089

WI-ANT-DEMO-900
Whip Antenna

-2dB Whip Antenna WI-ANT-DPL-2-6-54

The WI-ANT-DPL-2-6-54 whip antennas are suitable for the 900MHz products. These antennas have less gain than the WI-ANT-DPL-0-16 however are smaller and are preferred where space is tight.

The WI-ANT-DPL-2-6-54 is fitted with approximately 16 feet / 5 meters RG8 coaxial cable and SMA male connector. Further coaxial extensions are not recommended with this antenna.

The WI-ANT-DPL-2-6-54 is mounted from the base through a 3/8" (10mm) hole. This compact antenna is designed for short range use only.

The antenna is suitable for internal or external mounting. This antenna may be used on vehicles with a suitable bracket not supplied or when mounted in the panel work.

Type	Part No.
WI-ANT-DPL-2-6-54	6720005086

WI-ANT-DPL-2-6-54
Whip Antenna

0dB Dipole Antenna WI-ANT-DPL-0-16

The WI-ANT-DPL-0-16 is a ground independent half wave dipole suitable for the 900MHz products. It is a slimline, lightweight antenna that is easily mounted - this antenna is the most common antenna used in applications within industrial plants or factories.

The antenna has 15 feet / 5 meters of RG58 Cellfoil coaxial cable already terminated with a crimped SMA male connector. This antenna should not be used with additional lengths of coaxial cable - where longer lengths are required, used the WI-ANT-CLR-900-5-32 antenna or higher gain antenna. This compact antenna is made for vertical mounting. Correctly installed, this antenna will provide a net unity gain after allowing for the loss of the attached coaxial cable. The pack includes a standard pole bracket and clamps made from grade 304 stainless steel.

Type	Part No.
WI-ANT-DPL-0-16	6720005080

WI-ANT-DPL-0-16
Dipole Antenna

5dB Collinear Antenna WI-ANT-CLR-900-5-32

The WI-ANT-CLR-900-5-32 collinear antenna may be used for external or internal mounting. The WI-ANT-CLR-900-5-32 is a slimline, lightweight antenna that is easily mounted. A short RG58 coaxial tail is terminated with a crimped N-Type female connector. This compact antenna is made for vertical mounting clear from obstructions.

The pack includes a standard pole bracket made from grade 304 stainless steel (included with the antenna).

Type	Part No.
WI-ANT-CLR-900-5-32	6720005081

WI-ANT-CLR-900-5-32
5dB Collinear Antenna

8dB Collinear Antenna WI-ANT-CLR-900-8-54

The WI-ANT-CLR-900-8-54 collinear antenna is a slimline, lightweight antenna which is easily mounted, with a N-Type female connector. The WI-ANT-CLR-900-8-54 antenna is mounted at the base tube by U bracket (WI-BR-CLR-KIT). This antenna is used when maximum range is required or as a base station antenna.

Type	Part No.
WI-ANT-CLR-900-8-54	6720005082

WI-ANT-CLR-900-8-54
8dB Collinear Antenna

869/900 MHz ANTENNAS (continued)

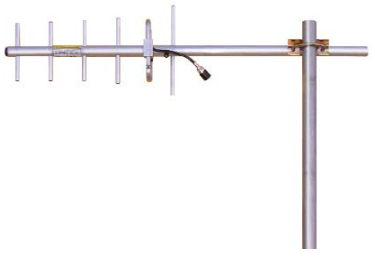
9dB 6 and 15dB 15 element Yagi Antenna WI-ANT-YGI-10-6, WI-ANT-YGI-15-16

The WI-ANT-YGI-10-6 6 element and WI-ANT-YGI-15-16 15 element Yagi antennas are made for use with the WI-I/O-9 series telemetry products.

They are designed for pole mount and to be clear from obstructions. The narrow beamwidth and high front to back ratio is effective in reducing the affects of interference and extending radio range. Mounting brackets are supplied separately with these antennas.

A standard female N-Type connection from a 6"/150 mm tail provides a simple connection method when using the WI-BR-YAGI-KIT.

Type	Part No.
WI-ANT-YGI-10-6	**6720005084**
WI-ANT-YGI-15-16	**6720005085**



WI-ANT-YGI-10-6, WI-ANT-YGI-15-16 Yagi Antenna

2.4 GHz ANTENNAS

0dB Whip Antenna WI-ANT-DEMO-2400

The WI-ANT-DEMO-2400 is a quarter-wave whip antenna. It can be used for short distance applications, where the wireless unit and antenna are mounted inside a non-metallic enclosure.

As the whip antenna is “ground-dependent”, the gain and distance depends on the installation environment.

Type	Part No.
WI-ANT-DEMO-2400	**6720005099**

WI-ANT-DEMO-2400 Whip Antenna

3dB Collinear Antenna WI-ANT-DPL-0-9

The WI-ANT-DPL-0-9 is a ground independent collinear antenna that may be used for external or internal mounting.

The WI-ANT-DPL-0-9 is a slimline, lightweight antenna that is easily mounted. Approximately 15 feet (5m) of low loss RG58 coaxial cable is terminated with a male SMA connector. This compact antenna is made for vertical mounting clear from obstructions.

Correctly installed this antenna will provide unity gain with the attached coaxial cable. The pack includes a standard pole bracket and clamps made from grade 304 stainless steel.

Type	Part No.
WI-ANT-DPL-0-9	**6720005090**

WI-ANT-DPL-0-9 3dB Collinear Antenna

5dB Collinear Antenna WI-ANT-CLR-5-20

The WI-ANT-CLR-5-20 collinear antenna may be used for external or internal mounting.

The WI-ANT-CLR-5-20 is a slimline, lightweight antenna that is easily mounted. A short RG58 coaxial tail is terminated with a crimped N-Type female connector. This compact antenna is made for vertical mounting clear from obstructions.

The pack includes a standard pole bracket made from grade 304 stainless steel. At data link 2.4 GHz frequencies, it is important to keep cable runs to the shortest length possible.

Type	Part No.
WI-ANT-CLR-5-20	**6720005091**

WI-ANT-CLR-5-20 5dB Collinear Antenna

10dB Collinear Antenna WI-ANT-CLR-8-34

The WI-ANT-CLR-8-34 is a vertically polarized collinear gain antenna designed for communications in the base and mobile ISM 2.4 GHz data link band.

Construction consists of copper internals and a black fiberglass radome. An N-Type Female connector is built into the high quality stainless steel mount tube.

Black Radome is provided to improve the antennas resistance to ice build up. This sturdy and compact design allows the antenna to be conveniently mounted on a mast, building or vehicle. The pack includes a standard 304 stainless steel pole clamp.

Type	Part No.
WI-ANT-CLR-8-34	**6720005092**

WI-ANT-CLR-8-34 10dB Collinear Antenna

2.4 GHz ANTENNAS (continued)

18dB Element Yagi Antenna WI-ANT-YGI-18

The 18 element Yagi antenna is designed for pole mount and to be clear from obstructions.

Black Radome is provided to improve the antennas resistance to ice build up.The narrow beam width and high front to back ratio is and extending radio range. A standard female N-Type connection from a 150mm tail provides a simple connection method when using the WI-CCSMA-N-33. Mounting brackets are supplied with this antenna.

Type	Part No.
WI-ANT-YGI-18	**6720005093**

WI-ANT-YGI-18
18 Element Yagi Antenna

COAXIAL CABLE KITS AND ACCESSORIES

Coaxial Lead WI-CCTAIL-SMA-24

The WI-CCTAIL-SMA-24 is a 600mm (24 inch) RG58 coaxial lead. This flexible coaxial "tail" is used inside enclosures to link large diameter coaxial cables (such as RG213 or LDF4) to the wireless units.

The WI-CCTAIL-SMA-24 is terminated with a flanged N-Type (female) bulkhead connector at one end and an SMA connector at the other end.

Type	Loss @ 900MHz	Loss @ 2.4 GHz	Part No.
WI-CCTAIL-SMA-24	0.8dB	1.2dB	**6720005103**

WI-CCTAIL-SMA-24
Coaxial Lead

Coaxial Cable Kits WI-CCSMA-N-10, WI-CCSMA-N-33, WI-CCSMA-N-66

The WI-CCSMA-N-10, WI-CCSMA-N-33 and WI-CCSMA-N-66 coaxial cable kits are designed for use between wireless units and external mounted antennas. The coaxial cable is terminated and tested alleviating time-consuming field termination work.

The WI-CCSMA-N-10 is 3.05 meters (10 feet) long, WI-CCSMA-N-33 is 10 meters (33 feet) long and the WI-CCSMA-N-66 is 20 meters (66 feet) long.

The kits are terminated with a N-type male connector at the antenna end of the cable. For the wireless end, kits are available with either SMA or BNC connectors to suit different products.

Type	Loss @ 900MHz	Loss @ 2.4 GHz	Part No.
WI-CCSMA-N-10	1.0dB	2.0dB	**6720005100**
WI-CCSMA-N-33	3.2dB	5.9dB	**6720005101**
WI-CCSMA-N-66	6.2dB	11.4dB	**6720005102**

WI-CCSMA-N-10, WI-CCSMA-N-33,
WI-CCSMA-N-66
Coaxial Cable Kits

Low Loss Coaxial Cables

For cables longer than a WI-CCSMA-N-66 kit (or WI-CCSMA-N-33 for 2.4GHz), low loss coaxial cables such as LDF4 should be used. Low loss cables have large diameters with large bending radii and are not suitable for direct connection to wireless modules.

Experience is required to terminate this type of cable and the coaxial manufacturer is able to assist. Consider using Andrew LDF4-250 1/2 inch - www.andrew.com

Connecting Cables for "L" Series

The WI-CSER-RJ45 cable is used to connect and perform diagnostic and configuration with the unidirectional Transmitter/Receiver units including the WI-I/O-L-T and WI-I/O-L-R. This high quality cable is fitted with a molded DB9 on one end and an RJ45 connector on the other.

Type	Part No.
WI-CSER-RJ45	**6720005108**

WI-CSER-RJ45
Connecting Cables for "L" Series

Serial to Serial Connectivity Cables

The WI-CSER-905-9 Serial cable is used for all Weidmuller telemetry products, allowing connection to your computer or laptop's RS232 port, for diagnostic and configuration. This high quality cable is fitted with a molded DB9 male and DB9 female connector. The cable connection is "straight-through".

Type	Part No.
WI-CSER-905-9	**6720005105**

WI-CSER-905-9
Serial to Serial Connectivity Cables

COAXIAL CABLE KITS AND ACCESSORIES (continued)

Coaxial Surge Diverter WI-DIV-CCMA (-1 dB loss)

The WI-DIV-CCMA coaxial surge diverter is installed between the antenna and the wireless unit to reduce lightning surges entering the module.

The WI-DIV-CCMA has an SMA connector and can be mounted directly to the module - it is suitable for the 450 MHz, 968/900 MHz and 2.4 GHz products. It can be used for 400MHz products with an SMA connector for added protection, however these already have an internal surge diverter.

A surge diverter is normally not required where an antenna is surrounded by a lot of steelwork, as in an industrial plant. The WI-DIV-CCMA is recommended where the antenna installation is NOT surrounded by steelwork, or in areas of high electrical storm activity where additional protection is desired.

The WI-DIV-CCMA requires additional weatherproofing if used externally.

If the module is mounted in a high vibration area or if large diameter coaxial cable (low loss) is being used, then the WI-DIV-CCMA should not be mounted directly onto the module. In these circumstances a short coaxial “tail” should be inserted between the module and the WI-DIV-CCMA.

The WI-DIV-CCMA will only work effectively with a good ground connection. The ground connection on the CSD, and the ground connection on the wireless module must be connected together. The common ground should be connected to the same ground point as the antenna mounting.

Warning: Do not stay near operating equipment during an electrical storm. The surge diverter will not provide protection to personnel.

Type	Part No.
WI-DIV-CCMA	**6720005111**

WI-DIV-CCMA
Coaxial Surge Diverter

ANTENNA MOUNTING ACCESSORIES

Collinear Mounting Brackets WI-BR-CLR-KIT

The Collinear antenna requires two mounting brackets to hold the antenna in position. The bracket assemblies consist of 1xU-Bolt 3xD-plates with nuts and washers in each set. The brackets are zinc plated mild steel.

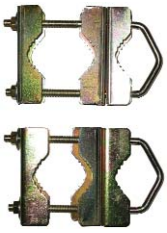
This simple method of mounting provides a solid support that will support the antenna for many years.

This mounting provides an excellent earth to the main pole. This pole should preferably have a low resistance to ground.

Mounting brackets may be replaced if the antenna is dismantled for maintenance.

The brackets are suitable for pole sizes up to a maximum 2" (50mm) in diameter.

Type	Part No.
WI-BR-CLR-KIT	**6720005110**



WI-BR-CLR-KIT
Collinear Mounting Brackets

Yagi Mounting Bracket WI-BR-YAGI-KIT

The Yagi antenna requires a single mounting bracket. The bracket assembly consists of 1xU-Bolt 1xD-plate with nuts and washers. The brackets are zinc plated mild steel.

This simple method of mounting provides a solid support that will permanently support the antenna.

This mounting also provides an excellent earth to the main pole. This pole should preferably have a low resistance to ground.

Mounting brackets may be replaced if the antenna is dismantled for maintenance.

The brackets are suitable for pole sizes up to a maximum 2" (50mm) in diameter.

Type	Part No.
WI-BR-YAGI-KIT	**6720005109**

WI-BR-YAGI-KIT
Yagi Mounting Bracket

WI-PS110/20

For wireless products that will accept 20 VDC. The plug pin arrangement is suitable for 110V power sockets

Type	Part No.
WI-PS110/20	**6720005104**

WI-PS110/20

www.weidmuller.com

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Weidmuller is the leading manufacturer of components for electrical connection technology to transmit energy, signals and data. The Weidmuller product portfolio ranges from terminal blocks, PCB connectors and terminals, protected components, Industrial Ethernet components, I/O components and relay sockets to power supplies and overvoltage protection modules suitable for all applications. Assemble Services, marking solutions with a variety of tools and software systems, round off the range. As an OEM supplier, the company sets global standards in the field of electrical connection technology.

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